

SECTION 07190
WATER REPELLENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

1.2 SUMMARY

- A. This Section includes clear water-repellent coatings for the following vertical and nontraffic horizontal surfaces:
 - 1. Concrete (unpainted).
- B. Related Sections include the following:
 - 1. Division 3 Sections for concrete work including floor sealers and curing agents, precast concrete, and concrete restoration and cleaning.
 - 2. Division 7 Section "Joint Sealants" for joint sealants.
 - 3. Division 7 Sections for fluid-applied waterproofing and dampproofing.
 - 4. Division 9 Section "Painting" for paints and coatings.

1.3 PERFORMANCE REQUIREMENTS

- A. Provide water repellents with the following properties based on testing manufacturer's standard products, according to test methods indicated, applied to substrates simulating Project conditions using same materials and application methods to be used for Project.
 - 1. Absorption: Minimum 90 percent reduction of absorption after 24 hours in comparison of treated and untreated specimens.
 - a. Hardened Concrete: ASTM C 642.
 - 2. Water-Vapor Transmission: Maximum 10 percent reduction in rate of vapor transmission in comparison of treated and untreated specimens, per ASTM E 96.
 - 3. Water Penetration and Leakage through Masonry: Maximum 90 percent reduction in leakage rate in comparison of treated and untreated specimens, per ASTM E 514.
 - 4. Durability: Maximum 5 percent loss of water repellency after 2500 hours of weathering in comparison to specimens before weathering, per ASTM G 53.
 - 5. Permeability: Minimum 80 percent breathable in comparison of treated and untreated specimens, per ASTM D 1653.

1.4 SUBMITTALS

- A. Product Data: Include manufacturer's specifications, surface preparation and application instructions, recommendations for water repellents for each surface to be treated, and protection and cleaning instructions. Include data substantiating that materials are recommended by manufacturer for applications indicated and comply with requirements.
- B. Samples: Of each substrate indicated to receive water repellent, 12 inches square, with specified repellent treatment applied to half of each sample.
- C. Applicator Certificates: Signed by manufacturer certifying that the applicator complies with requirements.
- D. Certification by water repellent manufacturer that products supplied comply with local regulations controlling use of VOCs.
- E. Material Test Reports: Indicate and interpret test results for compliance of water repellents with requirements indicated.

1.5 QUALITY ASSURANCE

- A. Applicator Qualifications: Engage an experienced applicator who employs only persons trained and approved by water repellent manufacturer for application of manufacturer's products.
- B. Regulatory Requirements: Comply with applicable rules of pollution-control regulatory agency having jurisdiction in Project locale regarding VOCs and use of hydrocarbon solvents.
- C. Field Samples: Construction Manager will select one representative surface for each substrate to receive water repellents. Apply water repellent to each substrate, with either partial or full coverage as directed. Comply with application requirements of this Section.
 - 1. Obtain Construction Manager's approval of field samples before applying water repellents.
 - 2. Maintain field samples during construction in an undisturbed condition as a standard for judging the completed Work.

1.6 PROJECT CONDITIONS

- A. Weather and Substrate Conditions: Do not proceed with application of water repellent under any of the following conditions, except with written instruction of manufacturer:
 - 1. Ambient temperature is less than 40 deg F.
 - 2. Concrete surfaces and mortar have cured for less than 28 days.
 - 3. Rain or temperatures below 40 deg F are predicted within 24 hours.
 - 4. Application is earlier than 24 hours after surfaces have been wet.
 - 5. Substrate is frozen or surface temperature is less than 40 deg F.
 - 6. Windy condition exists that may cause water repellent to be blown onto vegetation or surfaces not intended to be coated.

1.7 WARRANTY

- A. Special Warranty: Submit a written warranty, executed by the applicator and water repellent manufacturer, covering materials and labor, agreeing to repair or replace materials that fail to provide water repellency within the specified warranty period. Warranty does not include deterioration or failure of coating due to unusual weather phenomena, failure of prepared and treated substrate, formation of new joints and cracks in excess of 1/16 inch wide, fire, vandalism, or abuse by maintenance equipment.
 - 1. Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Products: Subject to compliance with requirements, provide one of the following:
 - 1. Proprietary Blends: With no more than 3.3 lb/gal. VOCs.
 - a. Chem-Trete PB; Huls America, Inc.
 - b. Okon W-1 Water Repellent Sealer; Okon, Inc.
 - c. Weather Seal H40; ProSoCo, Inc.

2.2 WATER REPELLENTS

- A. Proprietary Blends: Consisting of one or several different resins (silanes, siloxanes, or acrylics), polymers, stearates, or oils plus other compounds or products of components.
- B. VOC-Complying Water Repellents: Products complying with local regulations controlling use of VOCs, as certified by manufacturer.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clean substrate of substances that might interfere with penetration or performance of water repellents. Test for moisture content, according to repellent manufacturer's written instructions, to ensure surface is sufficiently dry.
 - 1. Formed Concrete: Remove oil, curing compounds, laitance, and other substances that could prevent adhesion or penetration of water repellents.
- B. Protect adjoining work, including sealant bond surfaces, from spillage or blow-over of water repellent. Cover adjoining and nearby surfaces of aluminum and glass if there is the possibility of water repellent being deposited on surfaces. Cover live plants and grass.
- C. Coordination with Sealants: Do not apply water repellent until sealants for joints adjacent to surfaces receiving water-repellent treatment have been installed and cured.
 - 1. Water-repellent work may precede sealant application only if sealant adhesion and compatibility have been tested and verified using substrate, water repellent, and sealant materials identical to those used in the work.

3.2 APPLICATION

- A. Apply a heavy-saturation spray coating of water repellent on surfaces indicated for treatment using low-pressure spray equipment. Comply with manufacturer's written instructions for using airless spraying procedure, unless otherwise indicated.
 - 1. Precast Work: At Contractor's option, first application of water repellent on precast concrete units may be completed before installing units. Mask sealant-bond surfaces to prevent water repellent from migrating onto joint surfaces.
- B. Apply a second saturation spray coating, repeating first application. Comply with manufacturer's written instructions for limitations on drying time between coats and after rainstorm wetting of surfaces between coats. Consult manufacturer's technical representative if written instructions are not applicable to Project conditions.

3.3 FIELD QUALITY CONTROL

- A. Manufacturer's Field Service: Provide services of a factory-authorized technical service representative to inspect and approve the substrate before application and to instruct the applicator on the product and application method to be used.

3.4 CLEANING

- A. Protective Coverings: Remove protective coverings from adjacent surfaces and other protected areas.
- B. Immediately clean water repellent from adjoining surfaces and surfaces soiled or damaged by water-repellent application as work progresses. Repair damage caused by water-repellent application. Comply with manufacturer's written cleaning instructions.

END OF SECTION 07190